

CLAIMS

1. Movement input device for use on a touch screen (14) of a portable electronic device (10) comprising:
 - 5 a fastening unit (16) for securing the movement input device on the portable electronic device and having a top and bottom side, said unit also being arranged for being placed over at least parts of the touch screen, and
 - a user input unit (18) fastened in and stretching through the fastening unit, wherein the user input unit comprises:
 - 10 a user actuation part (26) protruding from the top side of the fastening unit and being possible to actuate by a user for free angular movement with an angle of rotation around an axis (X) provided at least generally perpendicular to the top and bottom sides of the fastening unit, and
 - 15 a touch screen contact part (28;36) protruding from the bottom side of the fastening unit, which, when the device is placed for use on the touch screen and upon actuation by the user of the user actuation part, is arranged to contact the touch screen in a position where at least an angle of the contact position corresponds to the angle of the user actuation part, so that movement of the user input unit is detected on the touch screen.
- 20 2. Movement input device according to claim 1, wherein the user actuation part and the touch screen contact part are joined together by a fastening part (30) being fastened in the fastening unit while still allowing free movement round said axis.
- 25 3. Movement input device according to claim 1 or 2, wherein the touch screen contact part (28) comprises a pin (34) for direct contact on the screen so that a radial movement of the touch screen contact part from the axis X corresponds to a radial movement of the user actuation part.
- 30 4. Movement input device according to claim 3, wherein the touch screen contact part also comprises a spring (32) arranged to force the pin in contact with the touch screen.
- 35 5. Movement input device according to claims 1 or 2, wherein the touch screen contact part (36) comprises a disc having a rim, which contacts the screen at a fixed distance from the axis of the screen upon actuation of the user actuation part.

6. User input device according to claim 5, wherein the disc has parabolic shape.

7. Portable electronic device (10) comprising:

5 a body comprising: a touch screen (14) for detecting inputs from a user on said screen, and

a movement input device for use on said touch screen comprising:

a fastening unit (16) for securing the movement input device on the body and having a top and bottom side, said unit also being arranged for being placed over at least parts of the touch screen, and

10 a user input unit (18) fastened in and stretching through the fastening unit, wherein the user input unit comprises:

a user actuation part (26) protruding from the top side of the fastening unit and being possible to actuate by a user for free angular movement with an angle of rotation around an axis (X) provided at least generally perpendicular to the top and bottom sides of the fastening unit, and

15 a touch screen contact part (28) protruding from the bottom side of the fastening unit, which, when the movement input device is placed for use on the touch screen and upon actuation by the user of the user actuation part, is arranged contact the touch screen in a position where at least an angle of the contact position corresponds to the angle of the user actuation part, so that movement of the user input unit is detected on the touch screen.

20 8. Portable electronic device according to claim 7, further including an input determination unit (40) for determining positions of input from a user.

25 9. Portable electronic device according to claim 7 or 8, wherein the fastening unit is rotatably connected to the body.

30 10. Portable electronic device according to claim 9, wherein the body further comprises a fastening unit sensing device arranged to sense if the fastening unit is in position for providing inputs from the movement input device on the touch screen.

35 11. Portable electronic device according to any of claims 7 - 10, wherein the device is a mobile phone.